



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/019,067

06/28/2002

Mats Paulsson

HLZ-001USRCE

7795

959 7590 06/10/2009

LAHIVE & COCKFIELD, LLP  
FLOOR 30, SUITE 3000  
ONE POST OFFICE SQUARE  
BOSTON, MA 02109

EXAMINER

COUNTS, GARY W

ART UNIT

PAPER NUMBER

1641

MAIL DATE

DELIVERY MODE

06/10/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/019,067	<b>Applicant(s)</b> PAULSSON ET AL.	
	<b>Examiner</b> GARY W. COUNTS	<b>Art Unit</b> 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-16 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) 15, 16 and 26-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Status of the claims**

The amendment filed March 17, 2009 is acknowledged and has been entered. Currently, claims 13-16 and 26-31 are pending. Claims 15, 16, and 26-31 are withdrawn as being directed to a non-elected invention. Claims 13 and 14 are under examination.

### **Withdrawn Rejections**

All rejections of claims not reiterated herein, have been withdrawn.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for diagnosing gluten sensitive enteropathic autoimmune disease consisting of dermatitis herpetiformis and coeliac disease by testing a sample from a patient for IgA antibodies directed against human tissue transglutaminase and testing the sample for IgA antibodies directed against epidermal transglutaminase (TGe) and correlating significantly increased amounts of the IgA antibodies specific for human tissue transglutaminase and IgA antibodies specific for

Art Unit: 1641

epidermal transglutaminase as compared to a control sample, does not reasonably provide enablement for any and all gluten sensitive enteropathic autoimmune diseases or another transglutaminase such as FXIIIA, TGx and Band 4.2 or by correlating only a single result to a diagnosis. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Enablement requires that the specification teach those in the art to make and use the invention without undue experimentation. The factors that must be considered in determining undue experimentation are set forth in *In re Wands* USPTQ2d 14000. Factors to be considered in determining whether a disclosure would require undue experimentation include (1) the nature of the invention, (2) the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims.

The instantly recited claims are directed to a method for diagnosing a gluten sensitive enteropathic autoimmune disease, comprising taking a sample from a patient; testing the sample for IgA antibodies against human tissue transglutaminase; testing the sample for at least one other transglutaminase molecule selected from the group consisting of a-subunit of factor XIII (FXIIIA), keratinocyte transglutaminase (TGk), transglutaminase X (TGx), epidermal transglutaminase (TGe) and Band 4.2, as compared to a control sample with a diagnosis of gluten sensitive enteropathic

Art Unit: 1641

autoimmune disease, thereby diagnosing a gluten sensitive enteropathic autoimmune disease.

The specification fails to properly provide adequate written description to enable the method as claimed. The specification on page 15, lines 5-17 discloses that GSE sera showing elevated IgA antibody levels against the human TGc also showed elevated IgA titers against the human TGe. The specification also discloses that serum IgA antibodies from patients with CD and DH react with both the human TGc and the TGe although the titers to TGe are lower. The specification on page 12 discloses an ELISA assay utilizing human TGe and TGc to detect the antibodies. The specification on page 14, lines 10-22 discloses the serum concentrations of IgA antibodies against TGc in human TGc ELISA given in arbitrary units and teaches establishing a cutoff and discloses a cut-off value of 18 AU was chosen, and sera with antibody concentrations equal or higher than 18 AU were labeled as human TGc positive. The disclosure does not provide a direct correlation with another gluten sensitive enteropathic disease other than dermatitis herpetiformis and coeliac disease. The only direct correlation to disease presented in the specification is directed to dermatitis herpetiformis and coeliac disease wherein the sample is tested for IgA antibodies directed against human tissue transglutaminase and epidermal transglutaminase (TGe) and significantly increased amounts of the IgA antibodies are shown. There are no working examples provided in the specification and the specification has not shown a direct correlation with the a-subunit of XIII (FXIIIA), transglutaminase X (TGx) or Band 4.2 with a diagnosis of any

Art Unit: 1641

gluten sensitive disease. Further, the detection of IgA antibodies directed to a subunit of XIII, TGx and Band 4.2 are not well known in the art.

The specification on page 2, lines 10-24 discloses that the invention relates to a multiple protein binding assay and that multiple protein binding assay means that the diagnosis is done on basis of at least two differing transglutaminase molecules as antigens. Thus, the specification does not provide adequate written description to show or provide direct correlation of the use of IgA antibodies to a single transglutaminase to diagnose gluten sensitive enteropathic autoimmune disease. Thus, one skilled in the art cannot practice the invention without undue experimentation, because in order to have a high level of predictability, one skilled in the art would have to know that a correlation exists between the levels of IgA antibodies to transglutaminase molecules and one would also have to know that this correlation is diagnostic of gluten sensitive enteropathic autoimmune disease and one would also have to have guidance how a single transglutaminase is positively correlated with the diagnosis.

### ***Response to Arguments***

3. Applicant's arguments filed 03/17/09 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. No claim is allowed.

Art Unit: 1641

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY W. COUNTS whose telephone number is (571)272-0817. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571) 272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1641

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Gary W. Counts/  
Examiner, Art Unit 1641

/GAILENE R. GABEL/  
Primary Examiner, Art Unit 1641  
6/5/09